



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,960	02/03/2006	Christian Koeniger	101.0005US/PCT	4786

35294 7590 12/09/2009
SCHLUMBERGER RESERVOIR COMPLETIONS
14910 AIRLINE ROAD
ROSHARON, TX 77583

EXAMINER

JAGAN, MIRELLYS

ART UNIT	PAPER NUMBER
----------	--------------

2855

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

12/09/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

VSOLIS2@SLB.COM

ABrown15@rosharon.oilfield.slb.com

Office Action Summary

Application No.

10/520,960

Applicant(s)

KOENIGER ET AL.

Examiner

MIRELLYS JAGAN

Art Unit

2855

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 8-10, 17-21, 28, 30, 31, 36, 57, 59 and 60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-10, 17, 28, 30, 31, 36, 57, 59 and 60 is/are rejected.
- 7) ☒ Claim(s) 18-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/18/09
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1-5, 8-10, 17, 28, 30, 31, 36, 57, 59, and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0189806 to Davidson in view of U.S. Patent 6,640,900 to Smith.

Referring to claims 1-5, 8-10, 17, 57, and 60, Davidson discloses a system usable with a subsea well (figure 1), comprising:

a riser (24) extending from a platform (20) adjacent an ocean surface towards an ocean bottom (paragraph 4); and

a landing string (22) extending within the riser (24) from the platform (20) towards the ocean bottom;

wherein the landing string (22) extends in an interval (depth) within the riser (24) from the platform (20) toward the ocean bottom; the landing string (22) extends at least partially within a pressure control equipment (30) at the ocean bottom; a control umbilical is deployed as part of the landing string; the landing string is landed on a landing shoulder located on the pressure control equipment; the landing string is in communication with a well formation; and temperature sensors (64j, 64j in figure 18) are used for measuring temperature in the well (paragraphs 29, 34, 36-40, 59, 63).

Davidson does not disclose a line extending along at least part of a length of the landing string and including a distributed sensor system for sensing the temperature at various points along the length of the landing string; the line extending at least partially within the pressure control equipment; the line comprising a fiber optic line; the distributed sensor system comprising a plurality of sensors distributed along the length of the line; the line being mechanically attached to the landing string; a conduit located proximate the landing string and the fiber optic line located within the conduit; the conduit being within the control umbilical; and the line being attached to the riser.

Referring to claims 28, 30, 31, 36, and 59, Davidson discloses a method usable with a subsea well, comprising

deploying a landing string within a riser, the landing string and riser extending from a platform on an ocean surface towards an ocean bottom;

wherein the deploying the landing string step comprises landing out the landing string at a landing shoulder located on a pressure control equipment; and the landing string is in communication with a well formation.

Davidson does not disclose deploying a line along at least part of a length of the landing string, the line including a distributed sensor system; measuring the parameter at the various measurement points along the length of the landing string; the act of deploying the line along at least part of a length of the landing string comprises deploying the line along an interval of the landing string extending above the ocean bottom such that the distributed sensor system is adapted to sense the parameter at various points above the ocean bottom; the measuring step comprising measuring temperature at the various measurement points along the length of the landing string; the line comprising a fiber optic line and the measuring step comprising transmitting light through the fiber optic line and analyzing the returned back-scattered light to provide a complete temperature profile along the length of the fiber line; the deploying the line step comprises extending the line below the landing shoulder.

Smith discloses a system for measuring a parameter in a sub-sea well, comprising a string (8) extending towards the sea bottom (5); and an optical sensor system comprising a line (11) extending along at least part of a length of the string (8) and including a distributed sensor system (D) for sensing the parameter at various points along the length of the string, and a conduit (11) located proximate the string (8). The string (8) extends at least partially within a

pressure control equipment at the sea bottom, and the line (11) extends at least partially within the pressure control equipment; the line (11) comprises a fiber optic line (D). The parameter measured is temperature; and the distributed sensor system comprises a plurality of sensors distributed along the length of the line. The measuring step comprises transmitting light through the fiber optic line and analyzing the returned back-scattered light to provide a complete temperature profile along the length of the fiber line. The line (11) is mechanically attached to the string (8). The fiber optic line (D) is located within the conduit (11); and the string is landed on a landing shoulder located on a pressure control equipment. The line extends below the landing shoulder. The conduit is a control umbilical deployed as part of the string; and the string is in communication with a well formation (10). The act of deploying the line along at least part of a length of the string comprises deploying the line along an interval of the string extending above the sea bottom such that the distributed sensor system is adapted to sense the parameter at various points above the sea bottom to monitor and control the well (see figure 3; column 3, lines 1-8 and 34-40; column 4, lines 21, 22, 45-48 and 53-56; column 4, line 67-column 5, line 4; column 5, lines 34-37; column 5, line 55-column 65, line 1; column 6, lines 62-66; column 7, lines 30-36 and 53-59; and column 7, line 65- column 8, line 17).

Referring to claims 1 and 28, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system and method of Davidson by using an optical sensor system as taught by Smith in order to obtain temperature measurements along the length of the string in the well, which is disclosed as being desirable by Davidson.

Referring to claim 60, in using the optical sensor system as taught by Smith in the riser of the system of Davidson as stated above, the line will be attached to the riser.

Allowable Subject Matter

4. Claims 18-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The examiner's statement of reasons for the indication of allowable subject matter for claims 18-21 is stated in the Office action dated 1/28/08.

Response to Arguments

6. Applicant's arguments have been considered but are not persuasive.

Applicant's argument that the Office action contends that Davidson's temperature sensors are replaced with Smith's optical fiber is not persuasive because the rejection is based on modifying Davidson by adding a line and distributed temperature sensor to the Davidson system, as suggested by Smith.

Applicant's arguments that the Office action contends that Davidson discloses that obtaining distributed temperature measurements or measuring a temperature along the length of a string is desirable are not persuasive because the rejection is based on Davidson disclosing that it is desirable to obtain temperature measurements in the well (see section 3, paragraph 2 above).

Applicant's arguments that Davidson fails to cure Smith's deficiencies are not persuasive because the rejections are based on Davidson in view of Smith, not Smith in view of Davidson. The rejections are based on using a distributed temperature sensing system in the riser of the

system of Davidson since Smith suggests that it is desirable to obtain temperature distribution measurements in a subsea well. By deploying the line and distributed temperature sensing fiber down into the riser of Davidson, the line and fiber will extend along the landing string of Davidson in order to measure a temperature distribution in the well.

Applicant's arguments regarding the manner in which Smith installs the optical fiber in the tubing are not persuasive since claim 1 is an apparatus claim, and the method of forming the apparatus is not germane to the issue of patentability of the apparatus itself.

Conclusion

7. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MIRELLYS JAGAN whose telephone number is (571) 272-2247. The examiner can normally be reached on Tuesday-Friday 9:30 AM-8 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lisa Caputo can be reached on 571-272-2388. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gail Verbitsky/
Primary Examiner, Art Unit 2855

/MIRELLYS JAGAN/
Examiner, Art Unit 2855
December 2, 2009